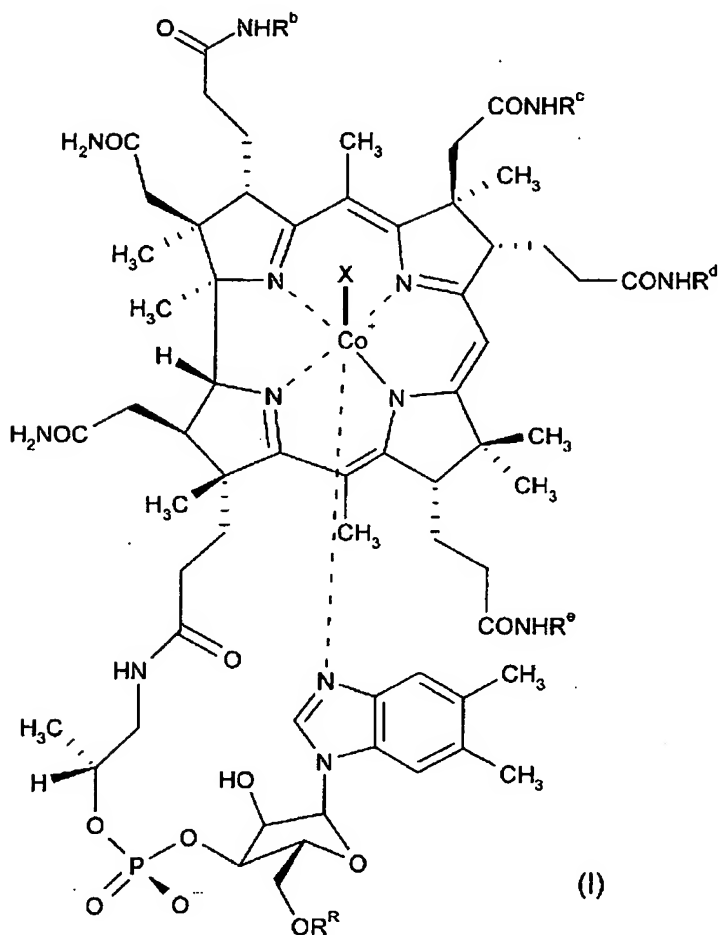


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1. (Currently Amended) A cobalamin derivative of formula (I):



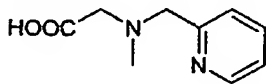
(i) R^b is a spacer-chelator group optionally carrying a metal atom;

(ii) R^c, R^d, and R^e are an antibiotic or antiproliferative therapeutic agent, or hydrogen; and R^R is an antibiotic or antiproliferative therapeutic agent connected through a linker Z, or hydrogen, wherein the linker Z is selected from the group consisting of phosphates, phosphonates, carboxylic esters, alkylenes of 1 to 10 carbon atoms, and combinations thereof;

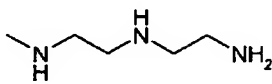
(iii) with the proviso that at least one of the residues R^c , R^d , R^e and R^f are hydrogen;

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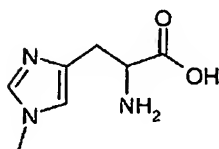
(iv) X is cyano, methyl, hydroxy, aquo or a 5'-deoxyadenosyl group; and
(v) the central cobalt (Co) atom is optionally in the form of a radioactive isotope; and
wherein the spacer-chelator group consists of an aliphatic chain of 2 to 4 carbon atoms carrying a chelator selected from the chelators of formulae (II) to (IX):



(II)



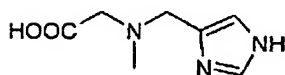
(III)



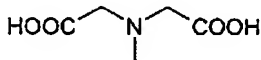
(IV)



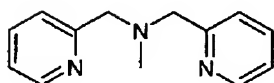
(V)



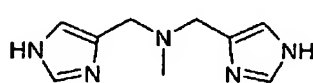
(VI)



(VII)



(VIII)



(IX)

wherein carboxyl groups in formulae (II) to (IX) may be present as esters; and
said cobalamin derivative:
(a) has no binding affinity or less than 20% binding affinity to transcobalamin II when compared to the binding affinity of non-modified cobalamin in a binding test, and
(b) retains activity as a vitamin B12 substitute.

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20. (Currently amended) A method of diagnosis of a neoplastic disease in a mammal comprising

- (a) exposing the mammal suspected of being inflicted by a neoplastic disease ~~or an infection~~ to a period of a vitamin B12 – free diet, and
- (b) subsequently applying a cobalamin derivative according to claim 1 carrying a diagnostic agent.